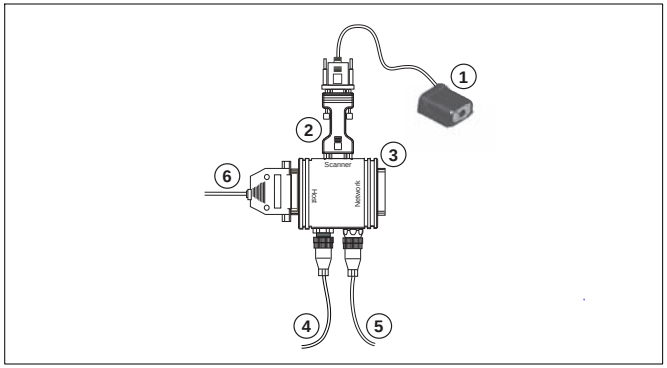
Quick Start Guide
EZ Match Imager

P/N 83-210051 Rev B

Step 1 — Check Hardware



Hardware Required

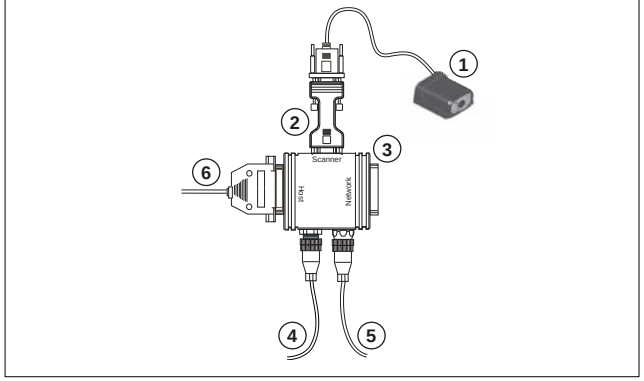
Caution: Be sure that all cables are connected **BEFORE** applying power to the system. Always power down **BEFORE** disconnecting any cables.

Item	*Description*	*Part Number*
1	EZ Match Imager (B&W or Color)	FIS-0004-100XG
2	IC-332 Adapter	FIS-0001-0035G
3	IB-131 Interface Box	99-400018-01
4	Power Supply	97-100004-15 (90-264 VAC, 24 VDC)
5	Object Detector (optional)	99-000017-01
6	Host Cable	61-300026-01

Step 2 — Connect the System

Connecting by RS-232 / RS-422 / RS-485

- Connect the imager (**1**) to the IB-131/IC-332 interface (**2**) and (**3**).
- Connect the host cable (**6**) to the host and to the host port on the IB-131 (**3**).
- Connect the object detector (**5**) to the IB-131 (**3**).
- Connect the power supply (**4**) to the IB-131 (**3**).
- Apply power to the imager.

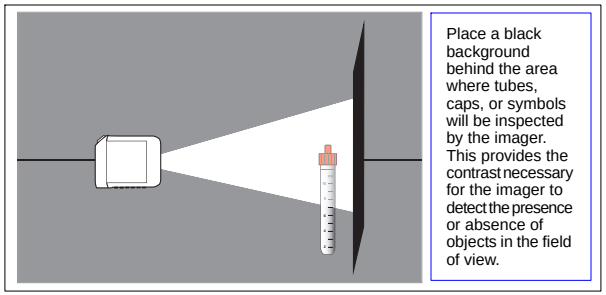


Hardware Configuration

Caution: Be sure that all cables are connected **BEFORE** applying power to the system. Always power down **BEFORE** disconnecting any cables.

Step 3 — Position the Imager

- Place the imager in an area with as little ambient light as possible.
- Place a black surface behind the area in which test tubes, caps, or symbols will be inspected by the imager.
  The black background provides the contrast necessary for the imager to detect the presence or absence of objects in its field of view.
- Position the imager at a focal distance between **2** and **6** inches from a sample tube, cap, or symbol.
- Position the imager relative to the object to avoid the glare of direct (specular) reflection. **Important:** Avoid excessive skew or pitch. Maximum skew is **±30°**; maximum pitch is **±30°**.


Place a black background behind the area where tubes, caps, or symbols will be inspected by the imager. This provides the contrast necessary for the imager to detect the presence or absence of objects in the field of view.

EZ Match Imager and Object in Field of View

- Objects can be rotated at any angle; however, for best results, objects should be aligned with the FOV (field of view).

Note: For accuracy of testing and performance, Microscan recommends using a mounting arm adapter kit. Contact your Microscan sales manager for details about mounting arm adapter kits and other accessories.

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Step 4 — Install ESP

ESP Software can be found on the Microscan Tools CD that is packaged with the EZ Match.

1. Follow the prompts to install ESP from the CD.
2. Click on the ESP icon to run the program.

Note: ESP can also be installed from the **Download Center** at **www.microscan.com**.

ESP System Requirements

- 166 MHz Pentium processor (recommended)
- Windows Vista, XP, or 2000 operating system
- Internet Explorer 5.0 or higher
- 64 MB minimum RAM
- 40 MB minimum disk space

Refer to the *EZ Match Imager User Manual* for detailed information about using ESP to configure the EZ Match.

Step 5 — Select Model

The following menu will appear when you start ESP:

Important: An EZ Match Imager must be connected to the host computer for its corresponding icon (shown at left) to appear on the model menu.

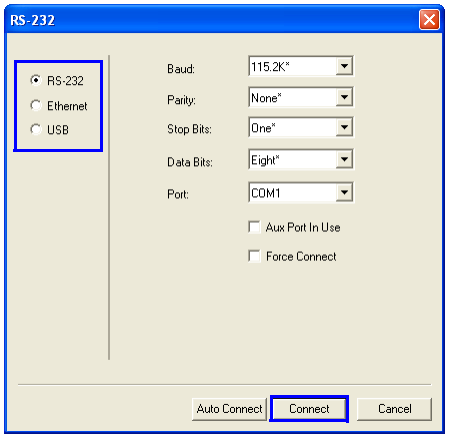
The icon will always be present in subsequent **ESP** sessions, even when the EZ Match unit is not physically connected.

1. Click the button showing the EZ Match Imager.
2. Click **OK**.
   Note: You can also double-click the EZ Match button to make your selection.
3. Click **Yes** when this dialog appears:

Note: If you need to select another model later, click the **Switch Model** button near the top of the screen or use **Model > New Model** in the menu toolbar.

Step 6 — Select Protocol and Connect

- Choose the connection protocol you are using and click **Connect**.



- Once you select your communications mode, follow the simple prompts to establish your connection.
- When you are connected, you will see the green connection indicator in the status bar at the bottom right of your screen.

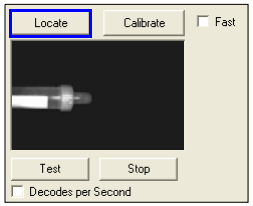
RS-232: CONNECTED | Point-to-Point | COM1 | 115.2K : N : 8 : 1

USB: CONNECTED | USB HID

Step 7 — Locate the Object

Locate the Object by ESP

- In **ESP**'s **EZ Mode**, click the **Locate** button to enable the blue target pattern.



The object in the field of view will appear in the video view beneath the **Locate** and **Calibrate** buttons, and you will see the blue target pattern projected from the front of the imager.

- Center the target pattern on the object.

  At 2 to 3 inches, the pattern resembles an **X**. At 3 to 6 inches, the pattern resembles a **V**.

  Important: The entire object of interest (tube, cap, or symbol) should fall within the field of view (FOV) of the imager. The field of view is what appears in **ESP**'s **Locate/Calibrate** window in **EZ Mode**.
- Click the **Stop** button to end the **Locate** function.

Locate the Object by EZ Button

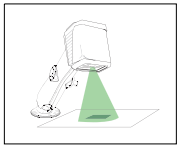
If you are not connected to a host computer, the EZ Button allows you to locate an object in the imager's field of view.

- Hold down the EZ Button for about one second and release when you hear one short beep. The amber **20%** LED will illuminate, and you will see the blue target pattern projected from the front of the imager.
- Center the target pattern on the object.

  Note: To end all EZ Button functions, press the EZ Button once and quickly release.

Step 8 — Calibrate

EZ Match settings can be adjusted automatically for optimum tube/cap detection and symbol decoding performance by either the EZ Button or by **ESP**. During the calibration routine, the imager will flash its amber Read Rate percent LEDs and red illumination LEDs while searching camera settings and determining the best configuration for detecting tubes or caps, or for decoding symbol data. Upon successful completion of this routine, a green LED pattern will flash brightly and illuminate the object. If unsuccessful, the imager will emit 5 short beeps and stop searching.



Calibrate by EZ Button

1. Hold down the EZ Button for about two seconds and release when you hear **two short beeps**. The **20%** and **40%** LEDs will illuminate.
2. The imager will search camera settings to determine the best configuration for detecting tubes or caps, or for decoding symbol data.
   Note: To end all EZ Button functions, press the EZ Button once and quickly release.

Calibrate by ESP

1. Click the **Calibrate** button.
2. The imager will search camera settings to determine the best configuration for detecting tubes or caps, or for decoding symbol data.
   A successful calibration will display a green frame around the object, and the following message will appear: "Uploading all reader parameters." After a moment the tube/cap data and/or symbol data will be presented in the field below the image display window.

Calibrate by Serial Command

Send **<@CAL>** from a terminal program to begin calibration.

Step 9 — Test Read Rate

Read Rate indicates the number of tube/cap detections or successful decodes per second achieved by the imager.

Test Read Rate by EZ Button

1. To start the Read Rate test, hold down the EZ Button about three seconds until you hear **three short beeps**. The **20%**, **40%**, and **60%** LEDs will illuminate. While the object is being inspected, the Read Rate LEDs will indicate the read rate percentage on the back of the unit.
2. To end the Read Rate test, press the EZ Button and quickly release.

Test Read Rate by ESP

1. Click the **Test** button to start the Read Rate test and **Stop** to end it.

   If a tube or cap has been successfully detected, or a symbol has been successfully decoded, the object's data and related features will be presented in the field below the image display window. Also, while the object is being inspected, the Read Rate LEDs will indicate the Read Rate percentage on the back of the unit.
2. To end the test, click the **Stop** button.

   Note: Read Rate can also be tested using the **Read Rate** interface in **Utilities**.

Test Read Rate by Serial Command

You can also start a test with the **<C>** or **<Cp>** command and end it with the **<J>** command.

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Step 10 — Configure the Imager

To make setup changes to the EZ Match Imager, click the **App Mode** button.

The following modes are accessible by clicking the buttons in the first row of **App Mode** icons:

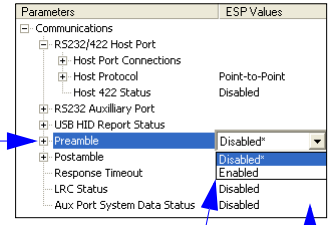
- Click the **EZ Mode** button to return to EZ Mode.
- Click the **Autoconnect** button to establish communication.
- Click the **Send/Recv** button to send or receive commands.
- Click the **Switch Model** button to open the model menu, or to return to a previous model.
- Click the **EZ Match** button to Test the imager and to configure Multi-Operation settings, tube/cap Library settings, and tube/cap detection Messages.
- Click the **Parameters** button to show the tabbed tree controls for Communication, Read Cycle, Symbologies, I/O Parameters, Symbol Quality, Matchcode, and Diagnostics.
- Click the **Setup** button to access a Camera Setup tree control and Video view, Evaluate image captures, Calibrate the imager, set the Window of Interest, fine-tune capture settings and processing settings in the IP Database, set up output filters and parse symbol data in Ordered Output and Output Format, and control multiple read cycle functions in Dynamic Setup.
- Click the **Terminal** button to display tube or cap detection data or decoded symbol data, and to send serial commands to the imager using text or macros.
- Click the **Utilities** button to test Read Rate, request or clear Counters, enable or disable the imager or send output pulses in Device Control, determine the Differences from Default in the current settings, add or remove master symbol data in Master Database, and verify or update the imager's Firmware.

For further details, see **ESP Help** in the dropdown Help menu.

Step 11 — Save Configuration

To make changes to a configuration setting:

1. **Left click** on the **+** to expand the desired tree.
2. **Double click** on the desired parameter and click once in the selection box to view options.
3. Place your cursor in the selection box, scroll down to the setting you want to change, and **click** once on the setting.
4. **Left click** on the open screen to complete your selection.
5. **Right click** on the open screen and select **Save to Reader** to implement the command in the imager.



Saving Options

- **Send, No Save**. Changes will be lost when power is re-applied to the imager.
- **Send and Save**. This activates all changes in current memory *and* saves to the imager for power-on.